Aalto University
School of Business

The Influence of Competition Environment and Strategic Orientation on Investments: Survey of Companies operating in Finland

Marketing

Master's thesis

Jami Söderström

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AALTO UNIVERSITY SCHOOL OF BUSINESS ABSTRACT

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THE INFLUENCE OF COMPETITION ENVIRONMENT AND STRATEGIC ORIENTATION ON INVESTMENTS: Survey of Companies operating in Finland

OBJECTIVE OF THE STUDY

Market environment confronted by companies comes as given, and to overcome the challenges in the industry, companies aim to fit their strategy according to the competition. Strategies alone lead nowhere. Successful strategy requires concrete actions. For concrete actions to be possible, they require investments, for example to marketing, to different projects, to digitalization of products and services, and most of all, to personnel to carry out all those tasks. This research aims to investigate the relationship between challenges in the market environment and companies' investments.

METHODOLOGY

This research applied data collected from 109 companies, which are belonging to 250 largest companies operating in Finland. Two multivariate techniques were used to analyze the data. First, factor analysis was conducted in order to define the underlying dimensions of competition environment and strategic orientation. Second, regression analysis was performed to study the relationship between those underlying dimensions and company investment orientation.

FINDINGS

The factor analysis revealed 4 factors of which 3 were identified as competition environmental factors and one for strategic orientation factor. Factors found were *technology turbulence, market turbulence, competition intensity* and *service improvement orientation*. After identifying different underlying dimensions, these factors were subjected to multiple regression analysis to further investigate the relationship between those dimensions and different investment orientations. In the multiple regressions analysis, correlations were found between those factors and investments in 'Market research and competitor analysis', 'Product or service improvement projects', 'Digitalization of products and services', 'Marketing communication and promotions' and 'Staff development'.

AALTO-YLIOPISTON KAUPPAKORKEAKOULU

Markkinoinnin laitos

Pro Gradu -tutkielma

Jami Söderström

TIIVISTELMÄ

1.12.2013

KILPAILUYMPÄRISTÖN JA STRATEGISEN SUUNTAUKSEN VAIKUTUS INVESTOINTIEN KOHDENTAMISEEN: Tutkimus Suomessa toimivista suuryrityksistä

TUTKIMUKSEN TARKOITUS

Yritykset kohtaavat markkinaympäristön annettuna ja yrittävät vastata parhaansa mukaan sen tuomiin haasteisiin sovittamalla strategiansa markkinaympäristöön ja kilpailutilanteeseen. Strategiat yksinään eivät johda mihinkään, vaan onnistuakseen ne vaativat konkreettisia toimia. Jotta konkreettiset toimet olisivat mahdollisia, ne vaativat toteutuakseen investointeja, esimerkiksi markkinointiin, erilaisiin projekteihin, tuotteiden ja palveluiden digitalisointiin sekä ennen kaikkea henkilöstöön, joka toteuttaa nämä kaikki tehtävät. Tämän tutkimuksen tarkoituksena on selvittää kilpailuympäristön tuomien haasteiden ja yritysten investointien välistä suhdetta.

METODOLOGIA

Tässä tutkimuksessa käytettiin dataa 109:ltä Suomessa toimivalta yritykseltä. Yritykset kuuluvat suurimpien 250 yrityksen joukkoon Suomessa. Dataa analysoitiin käyttämällä kahta tilastollista menetelmää. Ensimmäiseksi faktorianalyysillä pyrittiin löytämään piileviä muuttujia eli faktoreita, jotka vaikuttavat kilpailuympäristössä ja yritysten strategisissa suuntauksissa. Toiseksi suoritettiin regressioanalyysi, jolla selvitettiin näiden faktorien yhteyttä yrityksen investointisuuntauksiin.

TULOKSET

Faktorianalyysillä löytyi 4 faktoria, joista 3 oli kilpailuympäristöön liittyviä tekijöitä ja yksi strategiseen suuntaukseen liittyvä tekijä. Faktorit nimettiin seuraavasti: *teknologinen turbulenssi markkinaturbulenssi, kilpailuintensiteetti* sekä *palvelujen parannus-strategia*. Kun nämä piilevät faktorit oli tunnistettu, suoritettiin regressio-analyysi, jolla tutkittiin näiden faktorien ja investointisuuntausten välistä yhteyttä. Tutkimuksessa löydettiin yhteys kilpailuympäristön tekijöiden ja investointisuuntausten välillä seuraaviin kohteisiin: ’Markkinatutkimuksiin ja kilpailija analyysi’, ’Tuote- ja palveluparannus projektit’, ’Tuotteiden ja palveluiden digitalisointi’, ’Markkinointi kommunikaatio ja promootio’ sekä ’Henkilöstön kehittäminen’.

Contents

1. Introduction

Most companies confront competition in their industry as given and the level of competition intensity varies across time. According to Ken Matsuno et al. (2000), market environment and competition environment has been found in previous literature to have a connection to market orientation and company's performance. It seems obvious for companies to evaluate their competition environment and adjust their strategy according to that.

Kohli and Jaworski (1990) suggest that market environment influences market orientation. They define market environment to include following concepts: market turbulence, technological turbulence and competitive intensity.

Chen et al. (2010) investigated competition environment influence on TMT (Top Management Team) action aggressiveness and moreover, the relationship of action aggressiveness and company performance. They ended up with a conclusion that competition environment affects action aggressiveness and further the action aggressiveness is an important mediator between TMT integration and firm performance, particularly in hyper competitive conditions. But what they did not investigate, was the relationship with competition environment and company's efforts to invest to certain projects.

In previous literature (Carr et al. 2010), market orientation has been associated with different investment orientations. Carr et al. (2010), propose that in a more turbulent environment, companies considered as market creators, tend to emphasize strategic considerations in their strategic investments decision making rather than financial analysis. Nevertheless, they include financial analysis in their decision making as secondary, supportive role. From opposite direction, in more stable markets, restructurer companies give little attention to strategic consideration and exhibit very strong financial emphasis. Potentially influenced by their low performance and high shareholder influence, restructurers tend to set very tight financial targets for their strategic investment decisions.

Based on previous discussion, this paper aims to investigate, if competition environment is associated with different investment orientations. The study calls for the following main research question:

"*Are the elements of competitive environment and strategic orientation associated with certain investment orientations?*"

Additionally, sub question would specify the main research question by:

"*To which investment orientation direction each competitive environment factor or strategic orientation factor would guide the management to drive the investments?*"

This research utilized data collected from the answers of approximately hundred executives of the largest companies that operate in Finland. Survey questions were derived from previous literature (Bernard et al. 1993, Vorhies et al. 2009, Chen et al. 2010) and translated to Finnish language.

Two multivariate techniques were used to analyze the data. First, factor analysis was conducted in order to define the underlying dimensions of competition environment and strategic orientation. Second, regression analysis was performed to study the relationship between those underlying dimensions and company investment orientation.

Structure of the Thesis is following: Chapter 2 "Literature review" introduces the relevant literature related to the topic and chapter 3 "Research question" shortly describes the reasoning for the research. Chapter 4 "Methodology" explains in detail the data sample and applied statistical methods such as factor analysis and regression analysis. Chapter 5 "Findings and discussion" will discuss about the results of this study and chapter 6 "Conclusion and Managerial implications" will summarize the results achieved and discuss about managerial implications the results may have. Lastly chapter 7 "Limitations and proposals for future research" will discuss about the limitations of this research paper and provide proposals future research.

2. Literature review

The purpose of this section is to explain the relationship between competition environment factors and investment orientation by explaining the theoretical framework relevant to this topic by exploring previous literature. The section begins with introducing the competition confronted by companies and typical competition intensity features. Secondly, the competition intensity will be linked to company's strategic orientation. Thirdly, after reviewing competition intensity and market turbulence and technology turbulence topics, this paper explains shortly the Hypercompetition phenomenon. Then this paper links Business strategy with the business environmental issues. Lastly, this literature review section connects the former theories to investment orientation and investment process.

2.1 Competition intensity and market orientation

Competition plays important role at almost every industry. The intensity of competition varies through industries and across different times. According to Ken Matsuno et al. (2000) market environment has been investigated in the literature to have a connection to market orientation and company's performance. It seems obvious for company to evaluate their competition environment and adjust their strategy according to that. They're not able to act and compete by being isolated from the markets.

Market orientation is an outcome of a certain strategy, a strategy where the company has decided to be market oriented, not for example, technology oriented. It is not inevitable outcome, but has to be decided in the strategic vision planning. Being market oriented comes from the strategic vision and it defines what the company is pursuing. Kohli and Jaworski (1990) suggest that marketing environment influences market orientation. They define market environment to include following concepts: market turbulence, competitive intensity and technological turbulence and two factors; supply side factors and demand side factors. This paper focuses on investigating the first three concepts.

Slater and Narver (1994) propose that in an intensive competition environment, seller firm could not reach proper profit levels without being market oriented. They also state that despite of having

mixed results, the connection between market orientation and profitability is strong. To conclude, former studies indicated only limited support to their research that market environment affects directly to profitability and directed Greenley (1995) to conclusion that there is a factor, market orientation, which is related to marketing environment but stands alone and separated from it.

Being market oriented might necessitate long term planning, and therefore, long term investments. However, according to Doyle et al. (1988), there are two likely problems in this long term approach. First, enhancing market orientation requires investments in intangible assets, which may be seen as less important than tangible assets. Second, the commercial pressures attached to achieving short-term profits may over-shadow attention to long-term profits, and in many companies activities for enhancing market orientation are seen as being short term in nature. Nevertheless, investments in market orientation are determined in corporate strategic planning, which seemed to be important (Hambrick 1982).

According to Kohli and Jaworski (1990), a company can succeed relatively well, without being market oriented, in a low competition markets where customers are "stuck" with their products and services because of lack of competition and alternatives. In opposite situation, in high competitive markets, company is expected to lose customers and revenue to rivals if it lacks market orientation and offers customers products and services that are not meeting the customer needs. In that sense, competition intensity is expected to be important determinant of performance and company's strategic and operative decisions by which it chases that performance. Strategic and operative actions are dependent on the capabilities and resources the company has. Therefore, the company's performance depends on the resources and capabilities it has available in its hands and those further on depend on strategic decision to which capabilities the company has been investing. By investing, companies gather vital resources for their operations. In that sense competition intensity is in the core of this research paper when investigating investment behavior.

2.2 Market turbulence and technology turbulence

Kohli and Jaworski (1990) suggest that in addition to competition intensity; there are two other important factors, market turbulence and technology turbulence that are considered to have an influence on performance. Market turbulence indicates the change in customer base and their

preferences. They claim: *"organizations that operate in the more turbulent markets are more likely to be forced to modify their products and services continually in order to satisfactorily cater their customers' changing preferences".* By contrast, in stable markets where customers' preferences do not change enormously, organizations are not required to modify their products and services massively. Therefore, the essentiality of being market oriented stands relatively lower.

It logically follows that if market turbulence is supposed to have influence on performance, it should also have influence on investments by which that performance is pursued. Therefore, this paper suggests market turbulence to be related to performance through strategic orientation and investment behavior.

Kohli and Jaworski (1993) define technological turbulence in the environment and industry as the rate of technological change. Whereas market orientation strives for competitive advantage through the understanding of customer needs and offers products and services that meet those needs, Kohli and Jaworski (1993) suggest that rapid technology innovations represent an alternative way of acquiring competitive advantage additionally to market orientation. Therefore, in technologically turbulent markets, companies invest in different capabilities than market turbulent markets because they attempt to compete with different dimensions. In technology turbulent markets, technological innovations diminish, but not totally eliminate, the importance of market orientation. From opposite perspective, in mature markets where technological change is far from turbulent, organizations need to rely on market orientation to a greater extent rather than endeavoring to leverage technological advantage. This also implies technological turbulence to have influence on investment behavior in turbulent markets.

According to Cassab & MacLachlan (2009), today's competition is not as strictly tied to place as it previously was with traditional brick-and-mortar firms. Technological advance has made possible to compete with virtual channels and diminished the significance of physical locations in many industries. Competition and endless desire of being the number one company in the industry drive companies to continuously search for new opportunities and ways to enhance their performance. Therefore, companies need to create and innovate alternative ways to exploit their channels, both physical and virtual, to guarantee the best serving practices and implementation for their strategy and to provide their customers interesting view of the company and a convenient and positive shopping experience in a multi-channel environment.

Stone at al. (2002) argue that complex and technical environment might require staff development for the sales personnel and executives in marketing. This development of staff would guarantee best customer experiences in the sales interface and also the best suitability and fascinating marketing communication towards the customer leading to an improvement of sales. Staff development necessitates investment of money and time to occur. This perspective emphasizes the relationship between competition environment factors and company's investment orientation.

2.3 Business strategy

Strategy can be defined in many different ways. One way is provided by Thomson and Baden-Fuller (2010) who divide strategy to two different levels. At the more comprehensive level, the organization's strategy (corporate strategy), which includes plans to future on behalf of the whole organization. In contrast, in the narrower level, strategy is defined as business strategies, in which the success factors of the organization against its rivals are planned and created.

Minztberg's (1997) definition emphasizes not the organizational levels like Thomson and Baden-Fuller but is rather interested about the strategic plan, operational ploy, pattern, organizational position in the markets and organization cultural perspective. Minztberg suggest either of these pieces to be not enough to describe strategy as their own but to include more than one of these elements.

Jennings and Zandbergen (1995) suggest business strategy to be in general the guide book which directs the company's actions through its market environment. Business strategy will vary based on information available and should be re-evaluated in each individual situation. This evaluation forms the strategy in direction where it's supposed to reach to the market environment in the best possible way from a company's performance point of view. Furthermore, this explains why the business strategy influences more to performance than the market environment. As Hambrick (1982) stated, and Matsuno et al. (2000) pointed out, in each market environmental situation, the marketing orientation related to business performance could vary more across different business strategies than the market environment itself that influences the business strategies.

As Matsuno states: *"implementing a strategy requires control and monitoring of its effectiveness in the market"* and keeping in mind that the original business strategy was developed from the

perceived market environmental situation. It follows that business strategy and its implementation determines in some degree the performance dimensions in competition in the market more than the market environment determines. Moreover, this raises the interest to study, how the market environment and competitive intensity influences and guides the investment orientation and to which direction.

Also According to Miles and Snow (1978): *"organizations choose the appropriate strategy to fit themselves to their environment"*. In addition, Matsuno et al (2000) writes that strategy selection aims to good performance, economic efficiency and new product innovation. They also claim that based on previous, it can be hypothesized that relationship between market orientation and performance can vary across organizations depending on their type of actions. Within the same strategy, defending type of organization can concentrate on cost reduction and a prospector type might search for new markets, even though they both execute market orientation as primary objective.

Kaplan and Norton (2000) argue on behalf of strategy map that shows the cause- and-effect links by which specific improvement create desired outcomes. They also suggest that from a larger perspective, strategy maps show how an organization will convert its initiatives and resources - including intangible assets such as corporate culture and employee knowledge- into tangible outcomes. As Porter (2008), suggested competition environment shapes the strategic orientation. Moreover, Kaplan and Norton (2000) propose strategic maps will help to implement the strategy on practice. This links the competition environment factors to shape the usage of company resources, including investments.

Change acts as important element in competition environment from strategic point of view but also from the management point of view. According to Chennhall and Euske (2007) management control systems are critical when organization changes according to its new strategy. Therefore, when organizations attempt to change according to the new requirement set by competition environment, they need to adjust their strategy and capabilities to be able to respond to these new challenges. This responding with new capabilities would preferably require new investments.

Additionally, Morgan and Page (2008) define key success factor in rapidly changing competition environment to be strategic agility which they state to include ability to support on motivate organization to sudden changes and capability to capitalize changing market opportunities. Long

(2000) asserts the strategic agility of being able to be present in the right markets, at the right time with right products. According to Long, strategic agility does not mean not having strategy at all, but emphasizes strategic thinking and implementation to be a joint concept instead of two separated issues. Despite of fancy endeavor, combining a solid and clear strategy but at the same time keeping it agile and able to respond new trends and market needs, has been recognized to be challenging by Brown & Eisenhardt (1998).

According to Doz & Kosonen (2008), strategic agility is particularly important for the most knowledge intensive companies in a rapidly changing global world and in the era of digitalization and deregulation. They assert digitalization to already have influenced across industries how companies manage their operations and redefined the needed assets and capabilities. Additionally, former long-term barriers, such as geographical location and protectionism, have diminished their power. As a result, competition environment has spread to global, instead of former local environment. Therefore, because of wider markets and multiple new global competitors, competition environment has become more uncertain, volatile, fast changing and more difficult to anticipate. Moreover, this requires constantly evolving investment strategy and investments to new capabilities to ensure firm's ability to survive in the markets.

2.5 Investments

Etelälahti et al. (1992) argue that investments are utilization of long-term benefits through short-term costs. They view typical investment to have skewed cash-flows so that the initial investment cost is high and the benefits are realizing later. Additionally, Honko, Prihti & Virtanen (1982) claim that future path and ability to survive in the competition is mainly determined by the company's capability to invest towards productive and profitable purposes. If the company fails to invest profitable targets and gain either market share, customer attention and loyalty, improve sales or other relevant success measures for the business, it will lose for its rivals. Expressed simply, firms must be successful in their investment decisions in order to survive in the toughened competition. In that sense investments can be considered as one of the most important functions of organization.

Investments are typically categorized in to two depending on their purpose to the company: financial investments and real investments (Bodie, Kane & Marcus, 2005). This research focuses on

real investments. Real investments can be characterized according to Shapiro (2005) as investment projects, aiming either equipment replacement or expansion of products and services to meet new consumer needs.

According to Vecchiato and Roveda (2010), strategy formulation is strictly shaped by the analysis of the most likely future evolution of the competition environment. They declare to be vital to sharply identify opportunities and threats confronted by developing trends in order to deal with them appropriately. What makes this challenging however, is that business environments are under constant change. Most of these changes tend to happen out of individual company's ability to affect those. Such changes may happen in the macro economy, governmental regulation, competitor moves, and so forth. As those challenges cannot be affected directly, the company has to change its own operations and resources. In order to respond to those changes and upcoming challenges, even though a company rarely has power to control these variables, they impact on how business should be completed in the future by investing in certain activities, such as marketing communications, digitalization and ensuring staff superiority. Moreover, it is important to for company to monitor these variables and take them into account in decision making and through that in investment decisions. Stinchcomb (2006) states that companies who do not learn from the past are destined to repeat their mistakes and those who do not anticipate the future are condemned to be controlled by it.

According to Hambrick (1983) environmental conditions and strategy have direct impact on performance. Real investments and investment strategy, being the first procedure or actual steps towards strategy implementation in practice and reaching that performance, therefore should also be affected by environmental conditions and strategic orientation. Market environment, to which company reacted with their business strategy, seems to be important (Hambrick 1982). Investment orientation again could be considered as reflection of business strategy to implement the strategy on concrete level to respond to the environmental challenges.

In addition, Jauch et al. (1986) state environmental uncertainty to act as important variable in the explanation of company performance. Company performance is not automatically created from environmental obstacles and challenges via strategic orientation but need to be transformed and implemented to practice. Those daily practices are performed through the capabilities which the company has achieved by their former investments. Capabilities are highly dependent on the investments to material and immaterial resources as also human resources. Therefore, instead of

doing research about the competition environment relationship to company performance, this research investigates competition environment's relationship to investments. With investments companies try to accomplish that great performance and competitive edge to rivals.

According to Cassab & MacLachlan (2009), when providing respectable and uniform services to customers, they will highly value those. The trend appears to be increasingly to pursue quality service. By investing in qualified personnel and equipment, the company will minimize the inconsistencies and consequences of service failures. This will strengthen the understanding of the relationship between consumer needs and investments in capabilities. Improved customer service and the service quality are central concepts of being customer oriented and therefore those are part of market orientation. Market orientation is one technique to affect consumers brand loyalty and improvement in that might lead to greater revenue.

Investment actions could be seen as the end result of strategic planning and as a reflection of the competition environment and company strategy to respond to that environment. It represents top management team's best effort to maintain and renew future resources and capabilities for the company. These resources and capabilities predict and define what sort of competitive edges company might want to and will be able to pursue and which goals it will have to abandon.

3. Research question

In this section, the research question will be explained and justified by summarizing former literature review and shortly explaining the key issues in this research.

As explained in previous literature review, (Kohli and Jaworski 1990, Kohli and Jaworski 1993 and Kaplan & Norton 2000), environmental elements and strategic orientation have influence on performance. Additionally, Carr et al (2010) argue, investment decision making varies from strategic decisions to financial decisions depending on competition environment factors and strategic orientation and market orientation Therefore, this paper aims to find out with open empirical research question if and how market environment might be associated with strategic decisions and investment orientation.

4. Methodology

Data section presents the collection process of the data and the demographic characteristics of the respondent sample in detail. After introducing the data, analysis section justifies and explains factor analysis (4.2) and regression analysis (4.3) applied in this paper.

4.1 Description of the data

A large survey was performed by sending a questionnaire to 250 biggest companies of TE-500 (Talouselämä 500) list which is a central business magazine in Finland. That list includes 500 largest companies in Finland. A total of 109 respondents from 97 different companies answered and returned the questionnaire for further analysis. Respondents' roles in the company were executives and top management. Respondents' titles varied slightly. Roughly one third of the respondents were CEO's (33%) and roughly one out of four were CFO's (27%). The rest (40%) were other executives for example Unit Director, Development Director, Marketing Director, Country Director etc.

Survey questions were derived from previous literature (Bernard et al. 1993) and translated to Finnish language by professionals. There were multiple question patterns to measure attitudes and opinions of the respondents towards different issues from their company perspective to form a comprehensive picture of overall situation. Mentioning few of those for e.g. market orientation, service orientation, competition intensity, market turbulence, technology turbulence, investment orientation, strategy orientation etc. Most of the questions were attitude claims and answers were given on a scale to 1-7, one (1) representing "*strongly disagree*" and seven (7) "*strongly agree*".

The research sample was formatted from a total of 109 respondents from 97 different companies. In further factor analysis, two answers from the same companies' representatives were averaged to enhance results and to improve analysis. Appendix 1 introduces the basic demographic characteristics of the respondent companies.

T-test in Appendix 2 reveals that Finnish companies in the sample are on average larger than foreign ones when measured by revenue they create (significant at 0.05 level). Even though the

average amount of personnel seems to be greater in Finnish companies, the results were not significant at 0.05 level. That is probably due to the relatively small size of the sample.

From strategy perspective the only difference between Finnish and foreign companies were found how much they concentrate to "*Improving management quality*" ("*Johtamisen laadun parantamiseen*"). Finnish companies scored 5.79 and Others with 5.33 (sign. at 0.05 level).

One-way ANOVA (see Appendix 3) revealed two statistically significant features when respondents' attitude towards the strategy was measured. CEO's and "other executives" scored higher than CFO's when asked about "*importance of creating new low competitive markets*" and "*to offer services which our competitors do not*". The logic behind this might originate from the different perspectives towards the organization due to the position and responsibilities. CFO's as the guarding of assets primarily concentrates on other issues than creating new market possibilities. CEO as the leader of organization both in strategic and operational way will have more interests to create and explore new "blue ocean strategies" and low competition intensity markets. These results indicate unbiased respondent profile in sense that in most cases CEO's and CFO's didn't answer differently depending on their position.

Description of the data and respondents (see appendix 2. and appendix 3.) are presented to increase transparency of the data to familiarize reader with it before entering more advanced factor analysis and also to ensure that the data stands unbiased. After familiarizing the data and ensured its reliability, this research takes deeper insight to factor analysis and follows with the regression analysis.

4.2 Factor analysis

This section begins with the explanation of factor analysis. After introducing the factor analysis method this paper continues with the preparation of data, results of factor analysis and also reliability test of the results. After the reliability test this paper continues with analyzing the findings of factor analysis. Lastly his research comes up with regression analysis, findings and evaluation of reliability of the findings.

4.2.1 Factor analysis method

As mentioned above, two statistical analysis methods were applied to analyze the competition environment survey data. First, exploratory factor analysis was conducted in order to identify underlying patterns in the perceived nature of the competition environment and strategic orientation to guide investments. Second, regression analysis was performed to investigate which factors were associated with different investment orientations.

According to Malhotra and Birks (2007), factor analysis stand for procedures primarily used for data reduction and summarization. The purpose of the factor analysis is to define the underlying structure among the variables (Hair et al. 2010). Malhotra and Birks (2007) states also that these structures determine a few underlying factors that represent relationships among the highly interrelated variables. In this research, factor analysis is conducted to identify market environmental structures that affect behind investment decision making.

According to Hair et al. (2010), the basic assumption of factor analysis is that some underlying structure exists in the set of selected items. As nearly all of the competition environment items are significantly correlated at the 0.01 level (2-tailed), factor analysis was determined to be an appropriate technique for analyzing the research data.

The items placed in the factor analysis were: Technology turbulence:

- "*Technological changes offer great opportunities in our industry"*
- *"A large number of new product ideas have been made possible through technological breakthroughs in our industry"*

- *"The technology in our industry is changing rapidly"*
- *"Technological developments in our industry are rather minor"*

Strategy orientation question was: "How much your company will implement in following targets this year?" The options were following:

- "*To develop new services"*
- *"Offer services other than competitors ones"*
- *"Innovations in services"*
- *"To offer wider service portfolio than competitors"*
- *"Improving of management quality"*
- *"Creating new low competitive markets"*
- *"Offering special services"*
- *"Offering best possible service quality"*
- *"Developing new management system compared to rivals",*
- *"Operating more efficient than rivals"*
- *"Emphasizing organizational efficiency"*
- *"Offering affordable services"*
- *"Serving more versatile customer base than competitor",*
- *"Developing strictly defined market segments"*
- *"Improving customer experience"*

Market turbulence items were:

- "*It is hard to predict how customer needs and wants are about to develop in the market "*
- *"It is hard to predict our competitors moves"*
- *"In general, it is hard to understand how the market will change"*
- *"There exists a lot of uncertainty in the markets"*

Competitive intensity items were:

- *"Competition in our industry is cutthroat",*
- *"Price competition is a hallmark of our industry"*

- *"There are many "promotion wars" in our industry", anything that one competitor can offer others can match readily"*
- *"One hears of a new competitive move almost every day", "Our competitors are relatively weak".*

Malhotra and Birks (2007) claim following; to achieve proper sample size, there should be observations and variables at minimum of 5 to 1 ratio. The sample data consist of 97 individual firm responds and the first round factor analysis was performed at the beginning with 26 items and ended up finally with 13 items. The ratio (7.5) exceeds the minimum requirement. Therefore, the analysis findings are considered to have sufficient explanatory power.

Malhotra and Birks (2007) suggest the number of factor to be determined based on eigenvalues, which represent the amount of variance accounted for by the factor. In this approach, only factors with eigenvalues greater than one (1.0) are retained.

Obeying Malhotra and Birks (2007) advice, a rotated factor matrix is produced for the purpose of easing the interpretation of the factors. The varimax rotation method was used as it minimizes the number of variables with high loadings on a factor, and thus, enhances the interpretability of the factor solution. Factor loadings represent the correlations between the variables and factors and the variables with high loading on certain factor are the ones with strongest interpretation of the current dimension. Hair et al. (2010) state the factor loadings of 0.3 to 0.4 to be minimally acceptable, and values greater than 0.5 are required for practical significance. Therefore, in order to ensure truly correlated variables and factors, small coefficients with value below 0.55 were removed.

4.2.2 Data Preparation

Totally of 97 individual companies answered the questionnaire and N=97 stands for further analysis. Number of questionnaire items from which the factors were started to formulate was 27 and was collected from questions concerning Technology turbulence, Market turbulence, Competition intensity and overall Strategic orientation.

The competition intensity items were derived from the domestic competition intensity items instead of averaged domestic and foreign competition items to improve results and regression models with

investments. Reasoning behind this was that foreign companies with subsidiaries in Finland, the same executive who answered questions regarding competition intensity abroad might not be responsible for their investment planning abroad. Those plans are more likely to be executed in that abroad office rather than in their Finnish subsidiaries. In this way, executives who answered questions about market turbulence etc. in Finnish markets are the same executives who gave their opinion about future investment targets in Finnish markets. The same logic applies to Finnish company's abroad competition. Executives in here, who gave their opinion about their competition in the industry abroad, might not be responsible for determining the individual investment targets in there. Therefore, there might not be correlation between intensity and investments or the regression results would at least be confusing. This constrain of domestic competition intensity improved the forth coming regression model.

4.2.3 Measures

To measure these four constructs, multiple item questions were adopted from Kohli and Jaworski's (1993) prior research. Originally market turbulence was measured with 4 items, technology turbulence with 4 items, competition intensity with 6 items and strategic orientation with 13 items. Investments in different targets were measured in euros.

Number of items was further reduced by carrying out a principal component analysis with summated rating scales (Varimax rotation, minimum loading output .40). This research ended up with 4 four factors and total of 13 of the original items. Factors were named from the original question pattern except the strategy orientation. Strategy orientation factor that was formatted indicated strongly "*service improvement orientation*" and was named after that. Removed items were left outside because of their poor loading. All the factors, their individual components, factor loadings and communalities are presented in Table 4. This factor analysis appropriateness was evaluated with A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy which scored .721. A KMO value greater than .5 is desirable. Bartlett sphericity coefficient of 556.451 with significance of .000 (highly significant) obtained.

Table 1. Factor loadings, communalities and interpreting the factors

Factor 1 'Technology turbulence'		h^2
Technological changes offer great opportunities in our industry (TT1)	.894	.838
A large number of new product ideas have been made possible through technological breakthroughs in our industry (TT2)	.845	.762
The technology in our industry is changing rapidly (TT3)	.840	.754
Technological developments in our industry are rather minor (TT4)	.813	.705
Factor 2 'Service improvement orientation'		
Developing new services (SIO1)	.902	.853
Offering services our competitors are not offering (SIO2)	.826	.714
Innovations in services (SIO3)	.816	.680
Offering more comprehensive service portfolio than competitors (SIO4)	.595	.401
Factor 3 'Market turbulence'		
It is hard to predict how customer needs and wants are about to develop in the market (MT1)	.881	.783
It is hard to predict our competitors moves (MT2)	.834	.715
In general, it is hard to understand how the market will change (MT3)	.798	.686
Factor 4 'Competitive intensity'		
Competition in our industry is cutthroat (CI1)	.865	.813
Price competition is a hallmark of our industry (CI2)	.828	.782

The first factor *Technology turbulence* consists of 4 items: "Technological changes offer great opportunities in our industry (TT1)", "A large number of new product ideas have been made possible through technological breakthroughs in our industry (TT2)", "The technology in our industry is changing rapidly (TT3)" and "Technological developments in our industry are rather minor (TT4)". The first item measures if the technology is seen to make possible great opportunities through new innovations to respond customers' needs or to create new ones. The second item emphasizes technological breakthroughs in developing new product ideas. The first and the second item measured basically technology importance in the industry in a slightly different perspective. The third question actually measures the turbulence itself and fourth question is basically the opposite of the third question. This *Technology turbulence* factor remained the same as in previous literature and it strengthens its reliability.

The second factor was formatted from several items of which measured strategy orientation overall and not from single point of view. Those were not designed to form one factor and therefore some of the items had to be abandoned to achieve consistent factor loadings. Other option would have been to form 2 factors from those items. This research ended up with forming one strategy factor. Those abandoned items loaded poorly in the factor analysis and they were: "Improving of management quality", "Creating new low competitive markets", "Offering special services",

“Offering best possible service quality”, “Developing new management system compared to rivals”, “Operating more efficient than rivals”, “Emphasizing organizational efficiency”, “Offering affordable services”, “Serving more versatile customer base than competitor”, “Developing strictly defined market segments” and “Improving customer experience”.

At the end 4 items were left in the second factors. Factor 2 indicates *Service improvement orientation* as a strategic orientation. Individual factors are: “Developing new services (SIO1)”, “Offering services our competitors are not offering (SIO2)”, “Innovations in services (SIO3)” and “Offering more comprehensive service portfolio than competitors (SIO4)”. These four items measure the importance of inventing new services and offering such services that competitors are not offering. The similarity between item 1 and 3 is clear. Both measure the importance of develop and innovate new services. Also similarity between items 2 and 4 is easily found. They both measure the importance of offering something other than competitors are. Basically, they measure importance of differentiation of one’s service offering from rivals.

The third factor measures *market turbulence*. In former literature, market turbulence factor consist of 4 items of which one “There exists a lot of uncertainty in the markets” had to be abandoned from this. The selected 3 items which loaded properly in the analysis are: “It is hard to predict how customer needs and wants are about to develop in the market (MT1)”, “It is hard to predict our competitors moves (MT2)” and “In general, it is hard to understand how the market will change (MT3)”. All these items measure market change and unpredictability from slightly different angle. Unpredictability is measured from three points of views; change in customer needs, competitors unpredictable moves and overall difficulty to understand the market and its direction. These measure market turbulence as single construct.

The last factor measures *Competitive intensity* with two remaining items; “Competition in our industry is cutthroat (CI1)” and “Price competition is a hallmark of our industry (CI2)”. With these powerful expressions the competition intensity and price competition elements are measured. In previous literature, this factor has been measured with six items but in the analysis because of poor loadings four had to be abandoned. Those deleted items were: “There are many "promotion wars" in our industry”, “Anything that one competitor can offer others can match readily”, “One hears of a new competitive move almost every day” and “Our competitors are relatively weak”.

All the factors with their items seem to be logical and measuring relatively well what they're supposed to measure. This is further supported by Cronbach's alpha test results reported above in Table 5.

For the 13 raw variable items, these four underlying factors explain total of 72.97 % of the variance (see Table 3.). The first one, *technology turbulence* explains 26.34 percent and the second *service improvement orientation* 19.65 percent. These two factors together explain 45.99 percent of the total variance. The last two factors *market turbulence* and *competitive intensity* explain 16.44 and 10.54 respectively. Together the last two explain still almost 27 percent of the variation. These factors scores and results were saved for further exploitation in the regression analysis when testing their association with different investment models.

Table 2. Total variance explained by the factors

	Initial Eigen Values			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,424	26,342	26,342	3,424	26,342	26,342
2	2,555	19,653	45,995	2,555	19,653	45,995
3	2,137	16,437	62,432	2,137	16,437	62,432
4	1,370	10,538	72,970	1,370	10,538	72,970
5	0,783	6,023	78,993			
6	0,589	4,530	83,523			
7	0,470	3,612	87,135			
8	0,413	3,178	90,314			
9	0,314	2,412	92,726			
10	0,304	2,342	95,068			
11	0,268	2,058	97,126			
12	0,192	1,478	98,604			
13	0,182	1,396	100,000			

4.2.4 Reliability test

Factors that were formed from the component matrix analysis were further tested with Cronbach's alpha test. *Technology turbulence* scored the highest alpha .88 and *service improvement orientation* and *market turbulence* factors both scored .80 alphas. *Competitive intensity* scored lowest alpha .67. All the alphas, means, standard deviations, and correlations between the variables and within the construct are shown in the Table 2. Significant correlations are marked with * (.05) and ** (.01) in the table.

Correlations table (Table 2.) shows statistically significant and relatively strong correlations inside the factors. This indicates similarity between the items in each factor. Cronbach's alpha measures constructs internal consistency and resulted high alphas support the claim of similarity within each group. Only the *Competitive intensity* could be stated as relatively poor measure because of the alpha .67. All other constructs scored well (> .80) with Cronbach's alpha test. Correlations between the factors are lower and suggest those factors to be different from each other.

Table 3. Means, standard deviations, Cronbach's alphas and correlations

	Mean	*Std dev.*	*α*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Technology turbulence			.88												
1. [TT1]	4.47	1.66													
2. [TT2]	5.16	1.59		**.70****											
3. [TT3]	4.85	1.58		**.59****	**.77****										
4. [TT4]	4.55	1.73		**.58****	**.62****	**.57****									
Service improvement orientation			.80												
5. [SIO1]	5.22	1.25		.11	.27**	.27**	.05								
6. [SIO2]	5.16	1.31		-.06	.12	.14	-.04	**.73****							
7. [SIO3]	5.08	1.34		.16	.21*	.21*	-.01	**.71****	**.52****						
8. [SIO4]	5.01	1.38		.13	.12	.11	-.05	**.45****	**.33****	**.34****					
Market turbulence			.80												
9. [MT1]	3.82	1.49		.11	-.04	-.14	-.07	-.05	-.07	-.45	.15				
10. [MT2]	3.67	1.26		.13	-.02	-.09	-.09	.07	-.02	.09	.19	**.60****			
11. [MT3]	3.24	1.45		.06	-.01	.00	-.03	.05	.11	.08	.07	**.60****	**.52****		
Competitive intensity			.67												
12. [CI1]	5.27	1.34		.25*	.30**	.27**	.02	.20*	.14	.10	.02	-.07	.06	-.16	
13. [CI2]	5.53	1.47		.03	.01	-.03	-.20*	.31**	.37**	.16	.18	.12	.12	-.03	**.51****

*p< .05
**p< .01
Figures in bold indicate inter-item correlations within the factort.

4.3 Regression analysis

This section includes the implemented regression analysis method and provides detailed information about the models. Regression model results will be provided in Table 7. Reliability of the models will be discussed. The results will be introduced and analyzed comprehensively in the next chapter called "Findings and Discussion".

4.3.1 Regression analysis method

Because regression analysis allows multiple relationships to be tested simultaneously and controlling for alternative explanations and also comparing the effect sizes, it was chosen to be implemented in this research (Malhotra and Birks (2007). This way the impact of all the different factors to the dependent variable is possible to test at the same time in the same model and their effect sizes are comparable. Moreover, the model itself will be more accurate when these variables and their influence are tested at the same time (Malhotra and Birks (2007).

A total of 15 regression analyses were performed to test factors association with all the different investment orientations. The four factors formulated in factor analysis; *Technology turbulence, Service improvement orientation, Market turbulence and Competitive intensity*, were set as independent variables to explain the variation in the dependent variable. In each case the different investment orientation acted as dependent variable. Control variables were brought from the original data. Those controlling variables were *sales*, number *of personnel* and *country of origin*. Controlling variables were chosen because the amount of revenue and the amount of personnel may be associated with the amount of investments. Also the country of origin may have effect on different type of investments.

The factors were associated with the different investment orientations with significant results in five individual models. Those investment orientations were: *Market research and competitor analysis* (INV1), *Product or service improvement projects* (INV2), *Digitalization of products and services* (INV3), *Marketing communication and promotions* (INV4), *Staff development* (INV5).

All the models and individual investment orientations were first tested without the factors and only with the controlling variables. Actual factors were added to the models after testing the control variables. This way the results indicate how much of the R2 is explained by the control variables and how much by the factors. *R2 change* shows the increase of the model explanation with factors included. As the table 3 shows, the explanation ability of the model increased from .09 to .22 depending on the model when adding the factors.

Chen et al. (2010) pointed out that analyzing results with significance $p < 0.10$ could be practical and informative. It makes possible for the writer and the reader to make better judgment and conclusions about the models and results when the significance of the factor did not reach $p < 0.05$

level but was rather close. Factors with significant scores $p < 0.10$ still have some explanatory value and their influence can be discussed further on when pointed out $p < 0.10$ instead of just ignoring them. This gives advice for further researchers to make decisions concerning their models. It also provides the speculative possibility to estimate and investigate in the future research if the factor that achieved $p < 0.10$ would have been significant with different and larger data sample.

All the investment orientation samples were not normally distributed and had slight problems to be fitted in the models as they were. Normal P-P Plot of regression and scatter plot diagram showed mixed results. To over come these problems, logarithmical transformation (Vorchies et al. 2009) was carried out to normalize the variable. That operation flattened the effect of large investments which were located many standard deviations away from the normal distribution curve in the normal distribution diagram and caused the mixing of results. After this logarithm transformation the models reached proper results.

Table 4. Regression analysis results for individual investment targets

Variables	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
	INV 1		INV 2		INV 3		INV 4		INV 5	
Country of origin	-.07	-.08	-.17 †	-.19 †	-.09	-.13	.06	.05	-.04	-.07
Revenue	.12	.11	.19 †	.19 †	.31 *	.26 *	.01	.00	.09	.11
Number of personnel	.27 *	.35 **	.31 **	.36 **	.21	.26 *	.32 **	.41 **	.36 **	.45 **
Technology turbulence		.33 **		.28 **		.27 *		.25 *		.20 **
Service improvement orientation		.11		.12		.27 *		.17 †		.34 **
Market Turbulence		.13		.05		.07		.11		.20 **
Competitive intensity		.05		-.04		-.09		.18 †		.18 **
N	96	95	96	95	96	95	96	95	96	95
R2	.14	.27	.25	.34	.23	.39	.11	.24	.18	.40
R2 change		0.13		0.09		0.15		0.13		0.22
Durbin-Watson	2.04	2.15	1.95	2.09	2.26	2.32	2.16	2.02	2.38	2.38
Model significance	.006	.001	.000	.000	.001	.000	.022	.002	.001	.000

Standardized regression coefficients are shown. † $p < 0.10$; ∗ $p < 0.05$; ∗∗ $p < 0.01$.
Values are rounded to 0.01 when necessary. Because of rounding, values of R2 change may not exactly equal to the R2 differences between models.

INV1 = *Market research and competitor analysis*
INV2 = *Product or service improvement projects*
INV3 = *Digitalization of products and services*
INV4 = *Marketing communication and promotions*
INV5 = *Staff development*

4.3.2 Regression analysis results

The regression results are presented in the Table 7 above. The first significant model investigated whether factors in the competition environment and strategy would have influence on company's willingness to invest to *Market research and competitor analysis* (INV1). One of the controlling variables, "*Amount of personnel"* .35 ($p < 0.01$) and one actual factor *"Technology turbulence"* .33 ($p < 0.01$); showed significant result, predicting investments in market research and competitor analysis. More intense technology development in the industry makes sense for company to invest in market research helping them to determine customer needs in the industry. Moreover, it sounds reasonable for company trying to analyze competitor's moves, ideas, strengths and weaknesses in more technology turbulent environment. The model itself explained .27 (R2) of the total variance and R2 increased with 0.13 with the factors included.

The second model studied if some of the factors explain investments in *Product or service improvement projects* (INV2). Again, "*Amount of personnel"* .36 ($p < 0.01$) and one factor *"Technology turbulence"* .28 ($p < 0.01$); showed significant result, predicting investments in "*Product or service improvement projects"*. Technological turbulence might explain investments in product and service improvements which may include technological features in the product or as part of the service. The case may also be that companies in technologically turbulent markets are looking for other competition dimensions to differ themselves from rivals. Therefore if competition stays intense in the technology dimension, firms may see it necessary or even be forced to compete with service improvements to achieve consumers' attention and enhance their service experience. Lesser significant but still interesting results appeared in the model 2. *The country of origin* and *revenue* for the controlling variables showed at least some explanation effect with $p < 0.10$ level; Country of origin -.19 and Revenue .19. *Country of origin* will probably be results from the fact that foreign companies are not making their investment plans in the subsidiaries in Finland but rather in the headquarters abroad. Controlling variables *Revenue* and *Amount of personnel* are logical explanations. The more revenue and larger organization is measured by personnel, the more it has money to invest. *Service improvement orientation* was expected to correlate but it did not show significant result even though modest .12 coefficient. The model itself explained .34 (R2) of the total variance and R2 increased with 0.09 with the factors included.

The third model was trying to find out if these factors have correlation with *Digitalization of products and services* (INV3). According to the model "*Technology turbulence*" .27 ($p < 0.05$) and

"*Service improvement orientation*" .27 ($p < 0.05$) factors explained investments in digitalization of product and services. *Technological turbulence* explains digitalization of products and services. The more turbulent technology is, the more aggressive ways and more creative dimensions company must seek to develop competitive edge. As expected, the *Service improvement orientation* also had effect on "*Digitalization of products and services"* investment orientation. Digitalization of products and services may be the most efficient technique to improve the ease of service and customer experience that is not tied to time and place. Regarding controlling variables, *Revenue* and *Amount of personnel* correlated also with standardized coefficients .26 both. The model itself explained .39 (R2) of the total variance and R2 increased with 0.15 with the factors included.

The fourth model investigated whether factors in the competition environment and strategy would have influence on company's willingness to invest to *Marketing communication and promotions* (INV4). *Technological turbulence* had significant standardized coefficient with .25 ($p < 0.05$) to predict investments in *marketing communication and promotions*. Even though there were no other significant results among the factors, this research found some marginally significant results with $p < 0.10$. *Service improvement orientation* and *Competition intensity* coefficients were .17 and .18 respectively at $p < 0.10$ confidence level. Being service improvement oriented would preferably call for proper marketing communications to guide customers in the right direction. *Competition intensity* factor stands for logical explanation for investing *marketing communications and promotions* heavily to grab attention for ones products and services in a competitive market environment. The control variable *Amount of personnel* was also significant with coefficient .41 ($p < 0.01$). The model itself explained .23 (R2) of the total variance and R2 increased with 0.13 with the factors included.

The fifth and last model was to research if market environment or strategy orientation factors have impact on *Staff development* (INV5). According to the model *Staff development* was in the center of the development of competitive edge because all the factors showed significant results. *Technology turbulence* .20 ($p < 0.01$) with *market turbulence* .20 ($p < 0.01$) showed strong statistical significance. Additionally, *Competitive intensity* .18 ($p < 0.01$) explained variation and also the *service improvement orientation* scored .34 ($p < 0.01$) significant results with the largest coefficient. From all the market environmental perspectives, firms seem to find important responding to those turbulences and competition intensity with proper staff development and by hiring competent

personnel. The model itself explained .40 (R2) of the total variance and R2 increased with 0.22 with the factors included.

4.3.3 Reliability of results

As mentioned earlier, the investment data was logarithmically transformed to eliminate the mixing effects of large investments and also to achieve more accurate and reliable results for the research. Logarithm transformed investment data showed approximately normally distributed histogram. Error term normality P-P plots illustrated highly improved results compared to original variable as well as homoscedasticity scatter plots were equally distributed.

According to Malhotra and Birks (2007), multicollinearity should not be an issue because the all the variance inflation factor scores (VIF) were remarkably under the level of 2. For VIF's scores 2-10 are said to be somewhat questionable and scores greater than 10 to be not acceptable. In this research all the VIF scores were significantly under the questionable level of 2.

Still there might be some missing variables and missing factors that were not taken in to account in the regression models but which might have had some affection to the final results. In that sense the results should be dealt with certain prudence. Reverse causality should not be a problem with these models because individual company's actions cannot affect the total market competition or turbulence that much especially when these sample companies act in a multiple industries. Therefore, one actor is not able to change the market enough.

5. Findings and discussion

As the regression analysis has taken place and the numeral interpretation has been conducted, the next part of this research is to deliver more detailed interpretation of the findings and complement previous short analysis with discussion of results.

5.1 Models

In the first model *Technology turbulence* was positively associated with investments in *Market research and competitor analysis* (INV1). The more intense technology development in the industry the more it makes sense and the more company should be motivated to invest in market research. Market research will help them to determine customer needs in the industry in more precise manner. With a proper knowledge about competitor's future direction, new ideas and possible product launches and their overall strengths and weaknesses and of course knowledge about customer needs, might allow company to survive in turbulent markets. Therefore, investments to market research and competitor analyses, as it may be compulsory for some companies to invest, the others might still find it advantageous considering their competitive edge to rivals.

In the second model *Technological turbulence* was positively associated with investments in *Product or service improvement projects* (INV2). Part of the association might be explained with investments in product and service improvements which may include technological features in the product or as part of the service. That might be the case in technology intensive industries. They want to utilize their new technology take the most out of it by providing latest products and services. The case may also be that companies in technology turbulent markets are looking for other competition dimensions to differ themselves from rivals. Therefore, if the competition is intense on technology dimension, they may see it necessary or even be forced to compete with service improvements to achieve consumers' attention and enhance their service experience even though the service improvement might not necessarily include technology. In this case, investments in *product and service improvements projects* are just another way of competing and searching for alternative competitive advantages.

In the third model *Technological turbulence* obviously was positively associated with the dependent variable *digitalization of products and services* (INV3). The more turbulent technology, the more aggressive ways and more creative dimensions company must seek to develop competitive edge. Additionally, as expected, *Service improvement orientation* was also positively associated with investments in "*Digitalization of products and services".* It can be stated that digitalization of products and services may be the most efficient technique to improve the ease service and customer experience and it's not dependent on certain place at some specific time. It also does not require personnel to be present at shop all the time purchases happen. This may save labor cost compared to retail stores.

In the fourth model, *technology turbulence* was found to be positively associated with *Marketing communication and promotions* (INV4). As formerly interpreted technologically turbulent markets may force companies to aggressive ways of enhancing their sales. Therefore one way of putting it to practice would be investing to marketing communications and promotions. By this investment they might gain brand awareness and brand familiarity over the rivals at least temporarily.

As mentioned earlier, thus the other factors weren't significant at $p < 0.05$ level, *service improvement orientation* and *Competition intensity* factors were achieving significance at $p < 0.10$ level and were marginally significant.

Being *service improvement oriented* seems to call for proper marketing communications to guide potential customers in the right direction. Many services that the company offers, the potential consumers might be totally unaware that those services even exist. The customers might not recognize the need before the product would be offered to them. But after the awareness of such product or service, consumers might be willing to purchase one. Therefore, investments in a proper marketing communications will provide advantage and probably increase sales through enhanced brand awareness and brand familiarity.

Competition intensity factor stands for logical explanation for investing *marketing communications and promotions* heavily to grab attention for ones products and services in a tough competition. As formerly mentioned, customers might not know the existence of one's offering because of the lack of marketing communications or profusion of competitors flooding marketing communications. In that sense, more competitive market requires more action in the marketing communications matter.

In the last model all the factors were positively associated with the dependent variable *Staff development* (INV5). From all the market environmental perspectives seem to find it important to respond to those turbulences; both market and technology, and competitive intensity with proper staff development and hire competent personnel. Additionally, being *service improvement oriented* it requires to have creative, educated and intelligent personnel to co-operate and accomplish a plan for service improvements. Strategies and operative actions are not happening by themselves, there need to be qualified personnel to complete those plans and operative actions.

The logic behind former explanation exist the finding that whatever the company decides to execute as their strategy, whether it is market research and competitor analysis, product or service improvement projects, digitalization of products and services or marketing communication and promotions, the most important thing behind all those individual goals might be to invest in qualified and proficient persons as leaders to those projects and to work there as a team member. Fancy strategies will not succeed by themselves. There must be personnel to actualize those strategies.

6. Conclusions and managerial implications

The objective of this thesis was to investigate the research question:

> "*Are the elements of competitive environment and strategic orientation associated with certain investment orientations?*"

Additionally, sub question would specify the main research question by:

> "*To which investment orientation direction each competitive environment factor or strategic orientation factor would guide the management to drive the investments?*"

Following conclusions could be drawn from the study: Market environmental factors as *market turbulence, technology turbulence* and *competition intensity* seemed to be associated with the company's willingness to invest in such capabilities which would support them to overcome these market environmental issues. These results are supported by Carr et al. (2010) former research in which they suggested strategic investment decisions to be associated with turbulent environment.

Kohli and Jaworski (1990) suggest that marketing environment is associated with market orientation. According to this research (see Table 4.) companies seem to invest to *Market research and competitor analysis* (INV1) and *Product or service improvement projects* (INV2) when operating in highly turbulent markets. They seem to invest *Digitalization of products and services* (INV3) in technology turbulent markets as well as when they pursue to improve their services aspects of business. These results are in line with Kohli and Jaworski (1990) former research.

Companies seem to invest in *Marketing communication and promotions* (INV4) in competitive markets, as well as when chasing improved services. Technologically turbulent markets also drive companies to invest *Marketing communication and promotions*. Additionally, this research revealed the association that whether companies operate in turbulent and competitive markets and seek for advantages or they want to improve their services for additional competitive edge, they see highly relevant to invest to *Staff development* (INV5). Investing to *Staff development* seems to be important in each significant model and under any circumstances. These results are supported by Chen et al. (2010) research about competition environment influence on TMT (Top Management Team) action aggressiveness. Turbulent markets encourage top management to make more aggressive actions. Investing to capabilities and knowledge are methods to take those actions.

For managerial purposes, this study supports the former study by Carr et al. (2010) that market oriented companies in turbulent markets are possibly aiming to overcome their challenges by thinking strategically. Carr et al. (2010) study claims strategically oriented companies to outweigh their rivals who make strategic decision relying more on financial analysis, and return on investments in short horizon.

If the management wants to maintain their competitive edge, they might want to make invest decisions based more on strategic consideration than purely on financial analysis. Those companies might have to invest more money, and more accurately than competitors, for example, to *Marketing communications and promotion* in competitive markets. Same applies to other investment orientations. If the common way in the industry by rivals includes investing on something to gain advantage over one company, then they most likely have to invest more money or to more clever targets to spurt that edge back. Investing to *staff development* seems important, but if every company executes that, company might find beneficial to make extra investments in their staff quality and wellbeing. To conclude, the results are supported by previous literature and this paper strengthens the theory between market environment and investment decision making.

7. Limitations and proposals for future research

There were several issues in this research that weren't answered and which would require further research. First, the association between being *"service improvement oriented"* and investments in *Product or service improvement projects* (INV2) was not found. Logically, there should be a connection between those but in this research with slightly narrow sample, the positive association between *Product or service improvement projects* (INV2*)* and company's interest to obey *service improvement orientation* ended up with no significant results.

Second, the *technology turbulence* was a significant factor in every significant regression model, whereas *market turbulence* scored a significant association only in one of the models with investments in *staff development* (INV5). *Technology turbulence* may have been over-presented and *market turbulence* under-presented in the sample or the *market turbulence* may not reach significant scores and would require larger data.

The data sample overall of companies that were analyzed were across industries. This could confound the findings with industry specific effects and mix the results overall. Future research should be completed with industry specific data to eliminate possible mixing of results and for reaching better results and enhance validity of those results. The data analyzed in this paper was too narrow to be divided it to industry specific samples. Analyzing larger and industry specific data would definitely lead to improvement of models and therefore more accurate and valid regression results would be reached.

Common method bias may be present in this research paper (Podsakoff et al. 2003). Knowing that the same respondent responded all the questions on behalf of their company may have confounded the results. The respondents might have fallen in to *consistency motif* trying to maintain consistency between their cognitions and attitudes. Thus, researcher desire people to appear consistent and rational in their responses, the respondents might search for similarities in the questions asked of them- thereby producing relationships that would not otherwise exist at the same level in real-life settings. Moreover, the designers of the questionnaire may have created *implicit theories* and *illusory correlations* by assuming co-occurrence of rated items, and these assumptions may introduce systematic distortions when correlations are derived from the ratings. Social desirability might be an issue because people tend to chase social approval and acceptance and the belief that it can be attained by means of culturally acceptable and appropriate behaviors.

Appendixes

Description of data

Appendix 1

Demographic Characteristics of the Respondent Companies (n=109)

Demographic characteristic	*Number of respondents*	*%*
Company size by revenue (M€)		
< 250	18	16.5
250-500	49	45.0
500-750	11	10.1
750-1000	7	6.4
>1000	22	20.2
Missing	2	1.8
Number of persons working in the company		
<500	24	22.0
500-1000	25	22.9
1000-2000	20	18.3
2000-5000	21	19.3
>5000	18	16.5
Missing	1	0.9
Internationality (proportion of revenue from abroad, %)		
0	31	32.0
0-19	24	24.7
20-39	6	6.2
40-59	8	8.2
60-79	10	10.3
80-99	16	16.5
100	1	1.0
Country of Origin		
Finnish	73	67.0
Other	36	33.0
Title of executive who answered		
CEO	36	33.0
CFO	29	26.6
Other Executive	44	40.4

Appendix 1. Demographic characteristics of the respondent companies

Appendix 2. Differences among respondents firms by origin of operating country (Finland or other) (N=109))

	Finland (N=76)	Other (N=36)	Total (N=109)
Measure of size			
Revenue	**1291.19***	**417.46***	
Personnel	3336.48	2035.09	
Strategy issues			
Improving of management quality	**5.79***	**5.33***	
Creating new low competitive markets	4.25	4.61	
Offering special services	4.78	5.19	
Innovating in service production	5.01	5.11	
Offering best possible service quality	5.58	6.00	
Developing new services	5.08	5.31	
Offering services our competitors are not offering	5.00	5.42	
Developing new management system compared to rivals	4.64	4.28	
Operating more efficient than rivals	5.58	6.06	
Emphasizing organizational efficiency	6.07	6.00	
Offering affordable services	4.21	4.28	
Serving more versatile customer base than competitor	4.75	4.67	
Offering more comprehensive service portfolio than competitors	4.81	5.28	
Developing strictly defined market segments	4.60	4.83	
Improving customer experience	5.70	5.50	

The questions were measured from 1 (completely disagree) to 7 (completely agree).
** significant at .05 level.*

Appendix 2. Difference among respondent firms by origin of operating country

Appendix 3. Attitude towards strategy by respondent position: One-way ANOVA

Respondent position in the company	*Total (N=109)*	*CEO (N=)*	*CFO (N=)*	*Other (N=)*	*F*	*Sig.*
Improving of management quality	5.64	5.78	5.38	5.70	1.531	.221
Creating new low competitive markets	4.37	4.81	3.83	4.36	3.284	**.041***
Offering special services	4.92	5.19	4.52	4.95	1.793	.172
Innovations in services	5.05	5.00	4.83	5.23	.786	.458
Offering best possible service quality	5.72	6.00	5.48	5.64	1.579	.177
Developing new services	5.16	5.39	4.72	5.25	2.590	.080
Offering services our competitors are not offering	5.14	5.47	4.59	5.23	4.074	**.020***
Developing new management system compared to rivals	4.52	4.86	4.17	4.47	2.869	.061
Operating more efficient than rivals	5.92	6.00	5.79	5.93	.390	.678
Emphasizing organizational efficiency	6.05	6.03	5.79	5.93	.755	.463
Offering affordable services	4.23	4.42	4.48	3.91	1.596	.208
Serving more versatile customer base than competitor	4.72	5.14	4.38	4.61	2.127	.124
Offering more comprehensive service portfolio than competitors	4.96	5.33	4.79	4.77	1.873	.159
Developing strictly defined market segments	4.68	4.89	4.38	4.70	.966	.384
Improving customer experience	5.63	5.92	5.28	5.64	2.148	.122

The questions were measured from 1 (completely disagree) to 7 (completely agree)
** significant at .05 level*

Appendix 3. Attitude towards strategy by respondent positions: One-way ANOVA

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